# LED Video Processor

## User Manual

⚠ Before using this LED Video processor please read this manual carefully and preserved for reference in the future.

# MAGNIMAGE

LED-550

# Statements

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The product specifications and information mentioned in this manual is just for reference, will not give prior notice if there is any updated. Unless there is a special agreement, it is just used as guidelines. All the statements or information in this manual shall not constitute any form of guarantee.

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# Briefs

Thanks for your purchasing our LED Video processor. Do hope you can enjoy the experience of the product performance. The design of the LED video processor conforms to international and industry standards. But if with improper operation, there will be a personal injury and property damage. In order to avoid the dangerous, please obey the relevant instructions when you install and operate the product.

## Trademark credit

- VGA and XGA are the trademarks of IBM.
- VESA is a Video Electronics Standards Association's trademark.
- HDMI、HDMI mark and High-Definition Multimedia Interface are all from HDMI Licensing LLC.

Even if not specified company or product trademarks, trademark has been fully recognized.

## About software

Do not change, decompile, disassemble, decrypt or reverse engineer the software installed in the product, these acts are illegal.

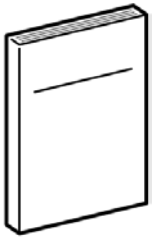
## Features

- Support user-defined output resolution, maximum horizontal 3840 pixel, and maximum vertical 1920 pixel.
- Support DVI port input resolution intelligent lock function.
- Input picture fast switching, as many as 20 switching effect.
- Picture and text overlay, cutout composite function, convenience to achieve the effect of the captions superposed and image compound.
- The multi-machine prompt restore function of working mould is convenience for you to switch rapidly in a variety of applications.
- Input hot backup function, allow you to be no longer embarrassed in case of sudden loss of the input signal.

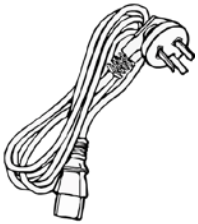
# Using directions

## Included Accessories

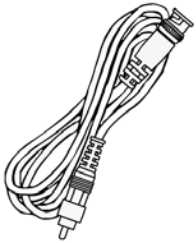
User manual



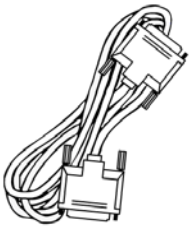
Power line



CVBS cable × 2



DVI signal cable



USB cable

Disk

3.5 mm Stereo headphone line

Certificate of quality

M3 screws × 4

Sending card stud bolts

4pin2.54 sending card power cable

# Extended Port

| Port | Model | Explanation |
|---|---|---|
| Extended DVI Port | LED-550DD | Add another DVI input port |
| Extended SDI Port | LED-550DS | Add SDI input/loop port |
| Extended VGA Port | LED-550DV | Add another VGA input port |
| Sound output port | Customized | Configuration sound output port |
| RF remote control | Customized | Add RF remote control module |

# Safety instructions

- Please use the correct power supply according that the power input voltage for this product range is 100～240V AC, 50/60Hz.
- When you need connect or pull out any signal or bound guideline. Please confirm that all the power supply cords have been pulled out ahead.
- When you need to add hardware device for the LED video processor, make sure all of the signals and power cables have been pulled out ahead.
- Before you operate any hardware, please turn off the LED video processor's power, and to set you on the electrostatic by touching the ground surfaces.
- Please use the processor in clean, dry and ventilated environment, not use it in the high temperature, humidity environment.
- The product is the electronic product; please stay away from the fire, water and of which is inflammable and blast, dangerous.
- This product is with high pressure components, please don't open the case or maintain it by your own.
- As there is exceptional condition with smoke, ill-smelling, please turn off the switch at once and contact with the dealers.

# Function introduction

## Brief

LED-550 series products are the video processor developed for the large screen display system, adopted the top image processing chips, internal 12 bits processing, with clearer images and richer colors.

Advanced alternate motion picture processing technology, to remove video motion tail or jagged, for the normal PAL/NTSC video, output image will be clearer, for the HD 1080i signal, output image details will be rich, full color and image quality is in the leading level.

Advanced image scaling technology, support user-defined output resolution, single unit can support horizontal resolution 3840 at maximum, vertical resolution 1920 at maximum, refresh frequency rate 120Hz, can upgrade the output signal bandwidth utilization greatly; furthermore, also can use the traditional standard output resolution, then scaling the output image by pixel to pixel according to the real size of the LED screen.

Accurate dual picture input image intercepting function, can realize the pixel to pixel display and material fusion.

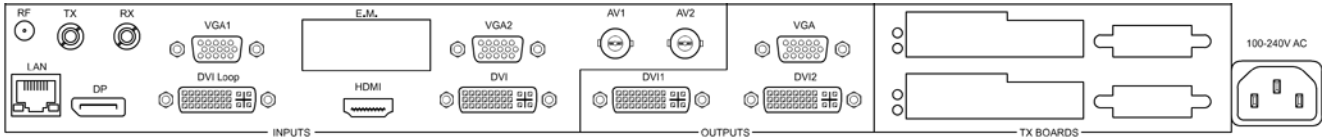
Intellectualized large size LED screen seamless splicing technique, the user just needs to have simple setting, they could realize that to send card picture splicing, can support 24576×24576 lattice LED screen; Unique synchronized moving technology, ensure high speed motion picture fluently without tail or derangements.

Perfect video image input port, including 2×VGA , 1×DP, 1×DVI (can be extended for 2 DVI simultaneous input), 1×HDMI 、2×video (PAL/NTSC) , 1×SDI (optional), support full HD signal input, can be connected with various audio and video equipment.

Support seamless switch between different input signal sources and picture in picture function.

The whole unit is with pure hardware framework, steady and reliable.

# Rear panel graphical representation



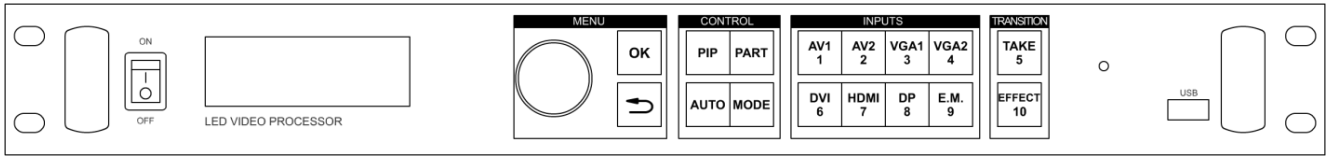

| Input | |
|---|---|
| AV1~AV2 | 2 CVBS input ports |
| VGA1~VGA2 | 2 VGA input ports |
| DVI | DVI input port (DVI-D) |
| HDMI | HDMI input port |
| DP | DP input port |
| E.M. | Expand input port |

| Control interface | |
|---|---|
| RF | Expand port, RF antenna terminal |
| TX、RX | Multi-machine communication port |

| Output | |
|---|---|
| DVI1~DVI2 | 2 DVI output port (DVI-D) |
| VGA | VGA output port |
| DVI Loop | DVI input signal loop out port |
| SDI Out | Expand output port |

| Audio | |
|---|---|
| HDMI | HDMI digital audio input port |
| SDI | Customized, SDI digital audio input |
| Audio output | Customized |

# Front panel graphical representation




| Buttons introduction | | | |
|---|---|---|---|
| OK | Confirm，or switch browse/setting mode | 1 / AV1 | Numeric key 1, CVBS1 select key |
| ⮌ | Return | 2 / AV2 | Numeric key 2, CVBS2 select key |
| PIP | Shortcut key of PIP function | 3 / VGA1 | Numeric key 3, VGA1 select key |
| PART | Shortcut key for part or full | 4 / VGA2 | Numeric key 4, VGA2 select key |
| AUTO | Auto adjust input image position | 5 / TAKE | Numeric key 5, Image switch hotkey |
| MODE | exhale template load or save menu | 6 / DVI | Numeric key 6，DVI select key |
| Press Knob | Same as the confirm key | 7 / HDMI | Numeric key 7，HDMI select key |
| Hold Knob | Exit, return to default menu state | 8 / DP | Numeric key 8，DP select key |
| Anticlockwise | Choose menu items, or adjust parameter | 9 / E.M. | Numeric key 9，E.M. select key |
| clockwise | Choose menu items, or adjust parameter | 10 / EFFECT | Numeric key 10 ,Image switch hotkey |

# Technical Specification

| Input indicators | | |
|---|---|---|
| Port | Number | Resolution |
| AV | 2 | PAL/NTSC |
| VGA | 2+1(inherent 2, scalable 1) | VESA standard |
| DVI | 1+1(inherent 1, scalable 1) | VESA standard (support 1080i input) |
| HDMI | 1 | EIA/CEA-861 standard，HDMI-1.3 |
| DP | 1 | VESA standard |
| SDI | 1（E.M.） | 480i、576i、720p、1080i/p（3G SDI） |

| Output indicators | | |
|---|---|---|
| Port | Number | Resolution |
| DVI loop | 1 | In accordance with DVI input, not support HDCP Loop |
| VGA | 1 | 1024×768/60Hz/75Hz/85Hz/100Hz/120Hz |
| DVI | 2 | 1280×1024/60Hz 1440×900/60Hz<br>1680×1050/60Hz 1600×1200/60Hz<br>1600×1200/60Hz – Reduced<br>1920×1080/60Hz/50Hz 2560×816/60Hz<br>2048×640/60Hz 1920×1200/60Hz<br>2304×1152/60Hz 2048×1152/60Hz<br>1024×1280/60Hz 1536×1536/60Hz<br>Customized (bandwidth optimization)：<br>H Resolution 3840(max.)<br>V Resolution 1920(max.) |
| SDI loop | 1 | 480i、576i、720p、1080i/p（3G SDI） |

| General | |
|---|---|
| Power supply | 100～240VAC，50/60Hz |
| Power consumption | 20W |
| Operating | 0~45℃ |
| Cabinet dimension | 484mm × （288 + 25）mm × （55 + 6）mm |
| Net weight | 2.6 Kg |

# Using Menu

LED-550 adopted a high brightness & contrast LCD screen to display the entire menu system, if the user does not have operation or operation timeout, the LCD screen will show the default state. Operate the menu system by using the knob and keys. The user can check and set its function and states convenient and intuitive to meet the demands.

The following will combine the keys function and the LCD screen display, detailed introduces you to LED-550 of menu system.

## How to use the keys

The front panel keys of LED-550 are divided into four areas: MENU, CONTROL, INPUTS, and TRANSITION. Besides them, there is special numeric area including all the buttons of INPUTS and TRANSITION area.

### MENU area

This area contains a knob which can be pressed, a confirmation key (OK) , and a return key ( ⮌). Press the "knob", its function is same as the confirmation key; long press the "knob", can make the menu system return to the default state immediately; when to press return key, the menu system may be back to the higher level menu in turn until returning to the default state.

In the main menu, OK key is also used in the switching between the two modes below:

| Browse mode | Setting mode |
|---|---|
| Picture Mode Normal<br>Brightness 50<br>Contrast 50<br>Color 50 | Picture Mode Normal<br>Brightness 50<br>Contrast 50<br>Color 50 |
| ↖ OK key, press the knob, can switch the two modes ↗ | |

In the browse mode, anti-clockwise "knob", the cursor moved to the above or the left. Clockwise "knob", the cursor moved to below or right. Put the cursor to the item need to adjust, press the "knob", or confirm key, namely into set mode, then anti-clockwise "knob", can reduce the current parameter value. Clockwise "knob", it can increase the current parameter values. If you want to continue to set this page other item, please switch back to browse mode. If you need to return to the higher level menu, please use the return key. If finish the adjustment, can long press "knob" to back to the default state directly, or wait for system overtime, automatic return the default state (in some special interface, the system will not be back to the default state, for example, image switch fast interface, user mode fast interface, test picture interface, etc.).

## CONTROL area

There are 4 keys: PIP, PART, AUTO and MODE.

| | Default menu state | Other state |
|---|---|---|
| PIP | Open or close the function of PIP, if long press the button, it will change the cascading relationship between image 1 and image 2 in the permission. | |
| PART | Switch part and full | |
| AUTO | Automatically rectify the image display position when the current input source is VGA. | Mode loading interface, press AUTO to switch for mode save interface |
| MODE | Select the model loading interface | Mode save interface,press MODE to switch for mode loading interface. |

## INPUTS area

In the default menu state, short press the area buttons can switch the image 1 input source to the corresponding input; if long press the button, then can switch the image 2 input sources to the corresponding input.

In the main menu, when to select the input source interface of image 1 and 2, short press the area buttons, can set the corresponding menu item parameter to the corresponding input port.

## TRANSITION area

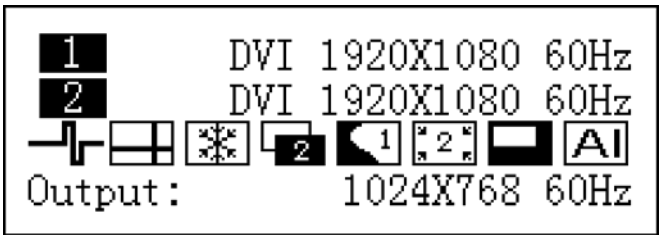
Press "TAKE" or "EFFECT" key, in the default menu system state, can select image switch interface. In the image switch interface, TAKE key is used to implement image switch function, EFFECT key is used to select image switch effect: short press EFFECT key can make the effect parameters positive change, long press EFFECT, it will make the effect parameters reverse change.

## Numeric key area

When browsing the menu, if the current item parameter is for numeric type, can through ten numeric keys to enter the need values directly. "10" is used to express the negative number (only in the parameters can be negative) before entering the numbers. In the edit value process, key "10" is used as "0" input number zero. In addition, in the edit time or network parameters, can only use the number keys to type in number directly, and could not set via the "knob".

# Default state introduction

Turn on the power supply of LED-550, in the process of the system startup, the LCD front panel would display the start interface on the left screen, when the start completed, there will show the machine’ s current state on the screen as the following figure shows:




Above the figure, there are 4 lines content, explanation as the following:

| Lines | Details |
|---|---|
| First line | Image 1 (main image, is also default image) port name and current input signal resolution. |
| Second line | Image 2 (vice image) port name and current input signal resolution. |
| Third line | State prompt area, by several icons to show the machine current working state.<br>There are 8 icons areas from left to right:<br>1、 Synchronism follow-up state area (valid in the condition of splicing function opening state) Splicing state area<br>2、 Mosaic status area<br>3、 Image freeze state area<br>4、 PIP state area<br>5、 Image 1 Cropping state area<br>6、 Image 3 Cropping state area<br>7、 PART (part or full screen) state area<br>8、 DVI input resolution lock state area<br>Check details in next page. |
| Fourth line | Output resolution, check details in “Output indicators” [9] |

In the default state, the third line area of LCD screen is status prompt area, by several icons to show the machine current working status. Please see the table below:

Form 1 ： State icons and meanings

| Icons | Area | Name | Hint (shortcut key in the bracket) |
|---|---|---|---|
| | 1 | Synchronism follow-up state area | When the Mosaic function is in opening state, Synchronism follow-up is also started successfully |
| | 2 | Mosaic state | Unequal mosaic function is open |
| | 3 | Image freeze state | Image is frozen |
| | 4 | PIP Off | PIP function off (PIP) |
| | 4 | PIP On[1] | PIP function on，picture 1 is on the top (PIP) |
| | 4 | PIP On[2] | PIP function on，picture 2 is on the top (PIP) |
| | 5 | Image Crop 1 Off | Image 1 Crop function is off |
| | 5 | Image Crop 1 On | Image 1 Crop function is on |
| | 6 | Image Crop 2 Off | Image 2 Crop function is off |
| | 6 | Image Crop 2 On | Image 2 Crop function is on |
| | 7 | PART Off | PART function is off (PART) |
| | 7 | PART On | PART function is on (PART) |
| | 8 | Input lock invalid | Not use DVI input resolution lock function |
| | 8 | Input lock valid | Use DVI input resolution lock function |

# Main menu introduction

The main menu will show the symbols listed in the table below, please check its specific meaning in the table below:

| Symbols | Explanation |
|---|---|
| ► | Press "knob" or "OK" to enter the detail setting page, or operate that directly. |
| Scroll bar | In the menu, on the right of the LCD screen, there will be a vertical scroll bar used to say the current option's position in this page, if the scroll bar is located in the bottom part, the current project is the last menu item of the page. |

In the main MENU, the user can use the "KNOB", "OK", "⮌" and other ten number key to select and adjust the each item. Its operation is fixed pattern, please check the following table:

| Operation | Key |
|---|---|
| Open the main menu | Press "OK" or press "knob" in the default state |
| Back to default state | Long press "knob" |
| Select item | In the browsing mode, rotate "knob" to select item |
| Adjust parameters | In the setting mode, rotating "knob" to adjust the selected parameters; Whether browsing mode or setting mode, numerical parameters can be set by the number keys. |
| Enter next level | When there is "►" on the right of item, press "knob" or "OK" |
| Performs | When there is "►" on the right of item, press "knob" or "OK" |
| Back to higher menu | Press "⮌" key |
| Confirm | When the reset operation, to avoid the incorrect operation, need to use the "OK" key to confirm operation |

## Main menu

In the default state, press "knob" or "OK" to enter the main MENU state, the LCD screen will show the details as below:

| | |
|---|---|
| Picture | ► |
| Output Setting | ► |
| Video Crop | ► |
| Image Switching | ► |
| Mosaic | ► |
| Test Pattern | ► |
| Communication | ► |
| Misc | ► |
| Dual Image | ► |
| Language/菜单语言 | ► |

The main menu has ten sub menu items, divided into three pages display. Rotating "knob" to select the above listed ten sub menu title, selected, press "knob" or "OK" button to enter the selected project, press " ⮌ " to be back.

The main menu contains the following functions:

| | |
|---|---|
| Picture | Brightness、Contrast、Color、Sharpness、Color temperature、Gamma、DVI/VGA Enhance、Scheme, etc. |
| Output Setting | Output Resolution，Image 1 position/Size，Part, etc. |
| Video Crop | Image 1 & 2, Video Crop |
| Image Switch | Automatic switch (Hot backup)、Switch Effect, etc. |
| Mosaic | Image 1 unequal mosaic parameter settings, synchronous lock mode settings (compatible with old model) |
| Test Pattern | Test pattern choose, Pixel position locating |
| Communication | Communication setting |
| Misc | Freeze、Save/Restore user mode、Input resolution Lock, etc. |
| Dual Image | PIP On/Off、Source Choose、Position、Size、Text overlay, etc. |
| Language | Support English and Chinese |

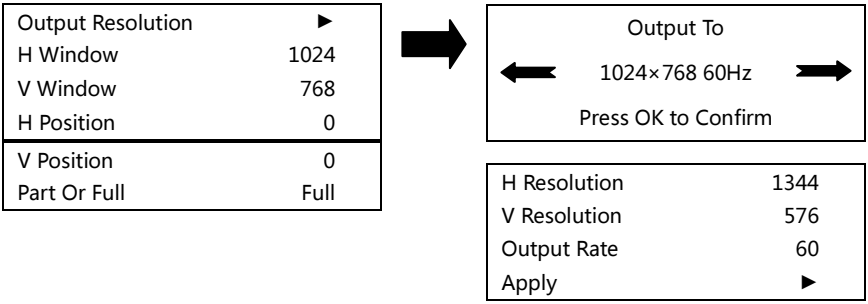
## Picture sub menu

| | |
|---|---|
| Picture Mode | User |
| Brightness | 50 |
| Contrast | 50 |
| Color | 50 |
| Sharpness | 12 |
| 3DNR/VGA Adjust | Off/► |
| Scheme | Vivid |
| Color Temperature | ► |
| Gamma | Off |
| VGA Enhance | Off |
| DVI Enhance | Off |
| Restore Picture Setting | ► |

| | |
|---|---|
| Color Temperature | Normal |
| Red | 50 |
| Green | 50 |
| Blue | 50 |

| | | |
|---|---|---|
| Picture Mode | Divided into "User"、"Vivid"、"Soft"、"Normal" the four options. | |
| Brightness | Range 0~100. | |
| Contrast | Range 0~100. | |
| Color | Range 0~100. | |
| Sharpness | Range 0~24. | |
| 3DNR | This function is valid when image 1 is not VGA, divided into "Off"、"Adaptive"、"Low"、"Medium"、"High" the five kinds of denoise mode. | |
| VGA Adjust | It is valid when image 1 is VGA1 or VGA2, automatically to adjust the position and size of input image. This moment, should ensure input image to be full screen and with a bright edge. | |
| Scheme | Divided into "Normal"、"Vivid"、"Theatre"、"Game"、"Sport" five modes. | |
| Color Temp | Divided into "Normal"、"Warm"、"Cool"、"User" the four options.<br>Only when select "User", "Red"、"Green"、"Blue" the three options is effect and the range is 0 to 100. | |
| | Red | Range 0~100, Valid in the Color Temp is set to "User". |
| | Green | Range 0~100, Valid in the Color Temp is set to "User". |
| | Blue | Range 0~100, Valid in the Color Temp is set to "User". |
| Gamma | Control the output Gamma value of video processor, divided into "Off"、"2.0"、"2.2"、"2.8"、"-1.1"、"-1.2" six options. | |
| VGA Enhance | Divided into "Off"、"Level0"、"Level1"、"Level2"、"Level3"、"Level4"、"Adaptive" seven options. | |
| DVI Enhance | In state of DVI input, it can greatly improve the output color and clarity. | |
| Restore Pic. | Reset above all the parameters to be the default value. | |

## Output Setting sub menu




| | |
|---|---|
| Output Resolution | LED-550 support 19 kinds of regular output resolution, also can customize horizontal/vertical parameter of output resolution. Use the knob to choose the resolution that needs to be set, press knob or ok to finish the settings. If choose "customize", need to set the resolution furthermore, then choose "apply" to finish. Find details in "output indicators" [🕮 9]。 |
| H Window | Minimum 64，Maximum is "the width of the current output resolution". |
| V Window | Minimum 48，Maximum is "the height of the current output resolution". |
| H Position | Minimum -16，the biggest can be set to the differentials between "the width of the current output resolution" and "H Window". |
| V Position | Minimum -16，the biggest can be set to the differentials between "the height of the current output resolution" and "V Window". |
| Part Or Full | Full：namely PART function shut.<br>Now the complete image will be shown on the LED screen, and the monitor will display shrunken image, "H Window", "V Window", "H Position" and "V Position" four parameters take effect automatically. |
| | Part：namely PART function open.<br>At this time the LED screen will show a part of the image, and the monitor will display full screen image, "H Window", "V Window", "H Position" and "V Position" four parameters will to be void. |

Please set the output resolution, H width and V height based on the physical resolution of LED screen. If do not have suitable output resolution, please select the options with bigger resolution than the reality. Or to choose the customize output resolution, to connect with the LED screen pixel to pixel directly.

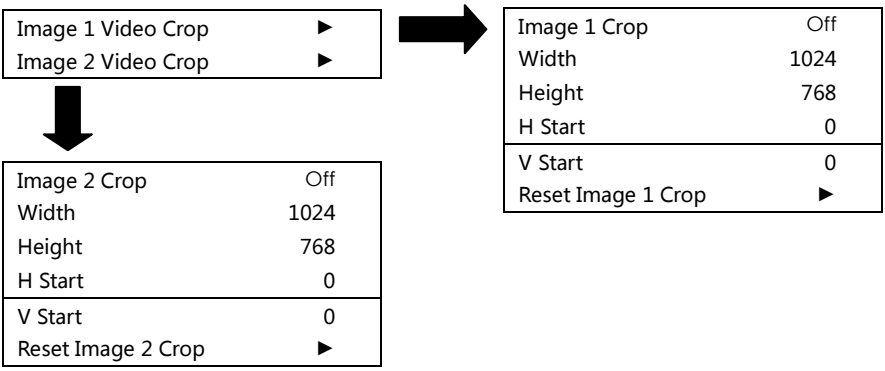
When it is smaller LED screen, suggest using regular output resolution, conversely, if the aspect ratio is very big, or the aspect ratio is very small, suggest using customized

output resolution.

Note1: please use the bigger than 60Hz refresh rate or greater height and width pixel output resolution judiciously, it is not sure that the back-end equipment can support this resolution.

Note 2: customized output resolution is not the standard output signal, part of the monitor may not be able to identify, but does not affect the LED display, please use carefully.

## Video Crop sub menu



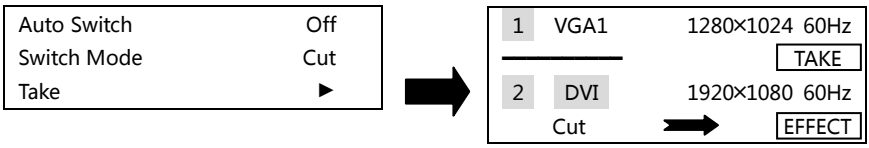

| | |
|---|---|
| Image 1/2 Crop | "On" or "Off" the Video Crop function for Image 1/2, default is Off |
| Width | Minimum value is 64, maximum value is the "input signal width" |
| Height | Minimum value is 32, maximum value is the "input signal height". |
| H Start | Minimum value is 0, the biggest can be set to the differentials between "input signal width" and "Width". |
| V Start | Minimum value is 0, the biggest can be set to the differentials between "input signal height" and "Height". |
| Reset | Reset the above four parameters. |

LED-550 support dual image video crop.

Image 1 Crop function only can be used in "Image 1 mosaic" closed, and Image 1 input signal effective. Image 2 Crop only can be used in Image 2 input signal effective. If "Video Crop" could not be used, system will give some hints when entering the submenu, users can exit this function according to the prompt , or force into the Video Crop interface (force into will close the conflict function).

Additional remarks: input signal width, height and other information can be checked in the display of "current input signal resolution specifications" in the state of "Default State" [🕮 13] .

## Image Switching sub men



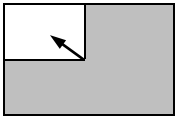
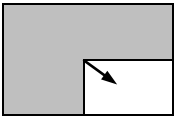
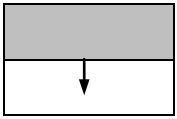
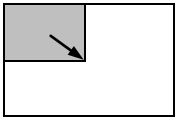
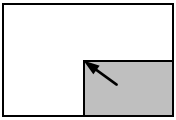
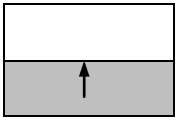
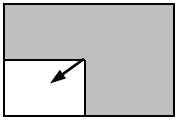
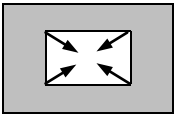
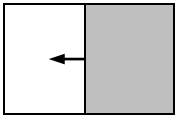
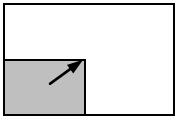
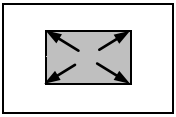
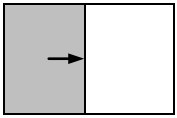
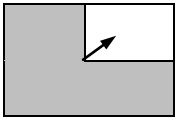
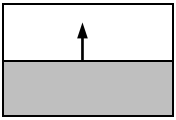
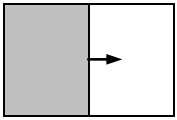
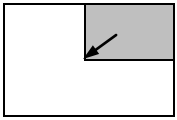
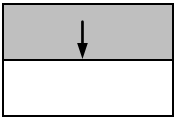
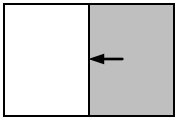

| | | |
|---|---|---|
| Auto Switch | Off | Auto switch function is closed. |
| | Window1 | If the image 1 input signal effective, the image 1 is on the top. |
| | Window2 | If the image 2 input signal effective, the image 2 is on the top. |
| | Signal* | The effect input signal picture is on the top. |
| Switch Mode | 20 kinds of switch mode. | |
| Take** | From this to enter the image switch shortcut interface (will force to close the auto switch function). | |

* : Signal priority options, used when the two picture input signals is invalid, the first effective picture is located in the top, the next effective picture will no longer make the layer change.
** : All the operation could be accomplished in the shortcut menu of the picture switching. As the above the right shows, the first interface is the input port of image 1 and input signal prompt; The third line is image 2 input port and input signal prompt; The second line is separator and switch button prompt ("TAKE" button, it will be the same effect to press "OK" and "TAKE" in the interface); The fourth line is a switch mode information, the left character is used to display the current switching mode, the right is the key prompt ("EFFECT" key), to short press "EFFECT" key, switching mode will change as the forward direction, long press "EFFECT" key, switch mode will change as the reverse direction.

In the fast switching interface, can use the INPUTS key to switch the bottom layer picture(the un-highlighted picture of the interface) input port, when it shows the effective format of the input signal, to press "TAKE" can display the input signal on the top in seamless switching.

Note: if the bottom picture input signal is invalid, advise to use the "Cut" and "Fade" effect, and press the "TAKE", the invalid signal will be switched to the top shows at the form of blank screen.

Form 2 ： Switching Mode list

| | | |
|---|---|---|
| L+T Pop-up1  | R+B Pop-up1  | Bot Pop-up1  |
| L+T Pop-up2  | R+B Pop-up2  | Bot Pop-up2  |
| L+B Pop-up1  | Center Pop-up1  | Left Pop-up1  |
| L+B Pop-up2  | Center Pop-up2  | Left Pop-up2  |
| R+T Pop-up1  | Top Pop-up1  | Right Pop-up1  |
| R+T Pop-up2  | Top Pop-up2  | Right Pop-up2  |

Note 1 : ▭ the occurring image

Note 2 : ▭ the disappearing image

Note 3 : Arrow means its moving direction in the image edge, that is, where the arrow image is compressing or stretching indicated by the arrow direction until disappeared or full screen.

## Mosaic sub menu

| | |
|---|---|
| Image 1 Mosaic | Off |
| H Total | 1536 |
| V Total | 640 |
| Width | 768 |
| Height | 320 |
| H Start | 0 |
| V Start | 0 |
| Sync Mode | Mode1 |

| | |
|---|---|
| Image 1 Mosaic | Image 1 mosaic function "On" or "Off", default is Off. |
| H Total | The physical pixel points of the LED screen in horizontal direction. |
| V Total | The physical pixel points of the LED screen in vertical direction. |
| Width | The pixel points that the display area of the current video processor shown in the horizontal direction. |
| Height | The pixel points that the display area of the current video processor shown in the vertical direction. |
| H Start | The level starting position of the display area that controlled by the current video processor.<br>The LED screen top-left corner is viewed as the original point (horizontal starting point 0). |
| V Start | The vertical starting position of the display area that controlled by the current video processor.<br>The LED screen top-left corner is viewed as the original point (vertical starting point 0). |
| Sync Mode | Divided into "mode1" and "mode2," mode1 for compatibility mode, used to connect with the old model for splicing. |

Note: the detailed mosaic setting explanation, please refer to the "Unequal Mosaic" [35]。

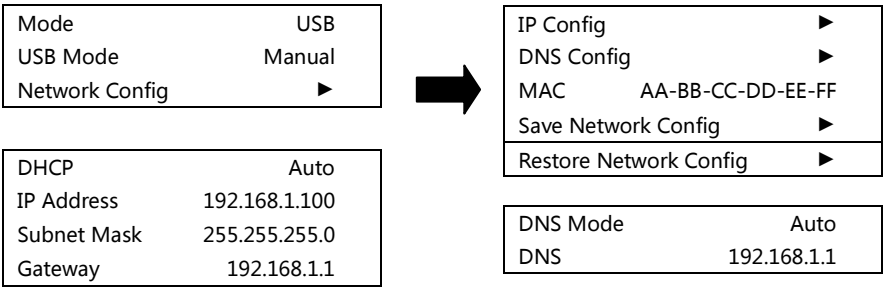
## Test Pattern sub menu

| | |
|---|---|
| Test Pattern | 0 |
| H Locating | -1 |
| V Locating | -1 |

| | |
|---|---|
| Test Pattern | Range 0~72. 0 means no test pattern display ,1~72 means test pattern number.<br>Open test picture, will close the image 2 by force.<br>If there is no signal for the image 1 input port, it will be displayed as "Unavailable" |
| H Locating* | The valid range minimum value is 0; maximum value is the horizontal width of the current output resolution.<br>To determine the horizontal position of the cursor on the screen, "-1", close the cursor. |
| V Locating* | The valid range minimum value is 0, maximum value is the vertical height of the current output resolution.<br>To determine the vertical position of the cursor on the screen, "-1", close the cursor. |

*: "H position" and "vertical position", as long as there is a numerical for "-1", in the picture will not display the positioning cursor.

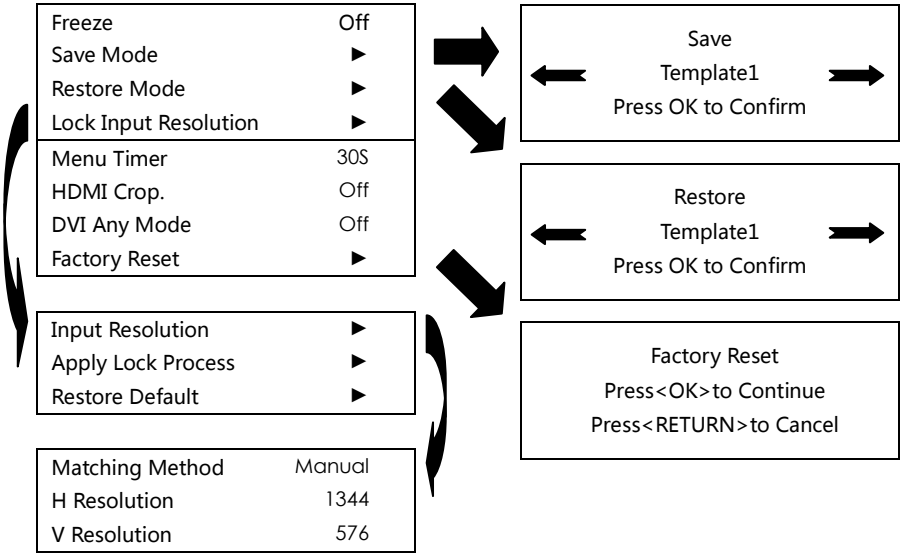
## Communication sub men




| | | |
|---|---|---|
| Mode | USB | Connect the USB of the front panel to PC computer, and operating the machine through the PC software. |
| | Network* | Connect the machine to a LAN, through the web browser to operate the machine directly. |
| | Multi Processor | Connect several LED550 together with communication line, to achieve multi machine interconnected. |
| USB Mode | Manual | Connect the machine to the computer through the USB, need to set the mode to be USB manually, then can control the machine through the PC software. |
| | Auto | Through the USB to connect the machine to the computer, can through the PC software to control the machine. |
| Network Config* | IP Config | Set the IP address and other related parameter. |
| | DNS Config | Set DNS parameter. |
| | MAC | Show MAC of local processor. |
| | Save Network Config | Used for preserve the change of network parameters before, if exit the interface without saving, it means to give up. |
| | Restore Network Config | Reset the network parameters to be the default Settings. |

* : LED550 series video processor, not each model is provided with network module, without network module, it will show the network relevant settings interface.

## Misc sub menu

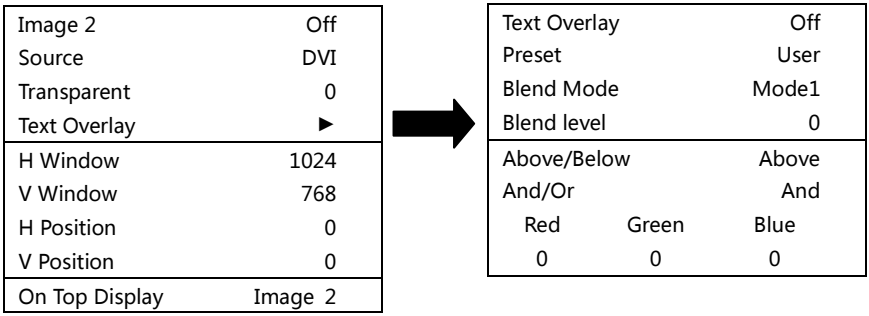



| | | |
|---|---|---|
| Freeze | Freeze functional switch, the picture display normal when it is closed, and be still when it is open. | |
| Save Mode | Save the current user settings. Can save 10 templates at the most. | |
| Restore Mode | Restore the before settings from template. | |
| Lock Input Resolution* | Matching Method | "Manual" or "Auto**" . if auto is set, system can read the configuration from back-end. |
| | H Resolution | Hand configuration output resolution horizontal locking value of the front end equipment. |
| | V Resolution | Hand configuration output resolution vertical locking value of the front end equipment. |
| | Apply Lock | Apply the above setting to the system. |
| | Restore Default | Restore the above parameters to be the default value. |
| Menu Timer | Without any operation, the menu system will be back to the default state time. The default value is "30S", can be set to "60S" or "10S". | |
| HDMI Crop. | HDMI reproduce rate setting, the default is closed. | |
| DVI Any Mode | DVI arbitrary mode setting, the default is closed. | |
| Factory Reset | Restore all settings to default. | |

* : Input resolution lock function is just effective for DVI input, if the lock resolution is not a standard resolution, that will require the front end DVI signal source with any model output functions (for example the computer with DVI output).

** : In the automatic matching mode, the machine will only through the DVI1 output port to detect the properties of the back end equipment automatically, which automatically gets the best input resolution of the back end equipment. Therefore, if you need to use automatic matching mode, please use the DVI1 output port.

## Dual image




| | |
|---|---|
| Image 2 | Image 2' s "On" and "Off" , default is Off. |
| Source | Switching input port of image 2(vice image)<br>This will be restricted by the input port of image 1, details in the "Dual pictures input source conflict list" [📖29]. |
| Transparent | The transparency of image 2, range is 0~3, when the value is 0, completely opaque, 3 the transparency is the highest. |
| Text Overlay | Text overlay, cutout synthesis menu, check details in the "text overlay specification" [📖29]. |
| H Window | The horizontal width of the image 2, and the minimum value is 64, maximum value is "the current output resolution width". |
| V Window | The vertical height of the image 2, and the minimum value is 48, maximum value is "the current output resolution height" |
| H Position | The top-left corner of image 2 levels of coordinates in "output resolution window". |
| V Position | The top-left corner of image 2 vertical coordinates in "output resolution window". |
| On Top Display | Switching the current top image; can choose "Image 1"or"Image 2". |

Form 3 ： Dual images input source conflict list

| Image1 / Image2 | AV1 | AV2 | VGA1 | VGA2 | DVI | HDMI | DP | E.M. |
|---|---|---|---|---|---|---|---|---|
| AV1 | ✓ | × | ✓ * | ✓ * | ✓ * | ✓ * | ✓ * | ✓ * |
| AV2 | × | ✓ | ✓ * | ✓ * | ✓ * | ✓ * | ✓ * | ✓ * |
| VGA1 | ✓ | ✓ | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| VGA2 | ✓ | ✓ | × | ✓ | ✓ | ✓ | ✓ | ✓ |
| DVI | ✓ | ✓ | ✓ | ✓ | ✓ | × | ✓ | ✓ |
| HDMI | ✓ | ✓ | ✓ | ✓ | × | ✓ | ✓ | ✓ |
| DP | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| E.M. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Note 1: During the above graph with "*" combinations, because the image 2 didn't go interlaced processing, there will be a slight shaking phenomenon in the screen, in this kind of circumstance, can consider exchange image 1 and image 2 input source.

Note 2: During switch input port, the system to image 1 for priority, if image 2 port and image 1 port conflict with each other, image 2 will be switched under the image 1 automatically.

| Text Overlay specification | |
|---|---|
| text overlay | Text overlay function "Open" and "Closed". The default is closed. |
| Blend Mode | Divided into "Mode1"and"Mode2" two patterns. |
| | Mode1 : In this mode the text pixels are on top and not blended. The non-text pixels are blended with the other channel using the Transparent setting in Dual Image sub Menu. |
| | Mode2 : In this mode the text pixels are blended with the other channel using the Transparent setting in Dual Image sub Menu. The non-text pixels are completely transparent. |
| Above/Below | Above : The pixel that has any color value above the Red, Green and Blue level become tagged as TEXT PIXELS, the rest of the pixels becomes NON-TEXT pixels. The judgment should be combined with the "And/Or" conditions. |
| | Below : The pixel that has any color value below the Red, Green and Blue level become tagged as TEXT PIXELS, the rest of the pixels becomes NON-TEXT pixels. The judgment should be combined with the "And/Or" conditions. |
| And/Or | And : all three color must be used to trigger the above / below comparison |
| | Or : any color is enough to trigger the above / below comparison |
| Red | Red Threshold, Range: 0~255 |
| Green | Green Threshold, Range: 0~255 |
| Blue | Blue Threshold, Range: 0~255 |

## Language sub men

| Language Select |
| --- |
| 中文/Chinese |
| English/英文 |

| | |
| --- | --- |
| 中文/Chinese | the menu will display in Chinese |
| English/英文 | the menu will display in English |

## Shortcuts menu

LED-550 sets up total eight input shortcuts (INPUTS), four function shortcuts (CONTROL), and two picture switch shortcuts (TRANSITION). Input shortcuts are: "AV1", "AV2" , "VGA1", "VGA2", "DVI", "HDMI"、DP" and "E.M." respectively; Function shortcuts are: "PIP", "PART", "AUTO", "MODE" and Switch shortcuts are "TAKE" and "EFFECT".

All the name of the keys and its position of the machine, please refer to the "Front panel graphical representation" [🕮 8]。

Note: Unless specifically mentioned otherwise, all shortcut keys are not effective unless in the "default state".

### Input shortcut

In the default state, to any input shortcuts, image 1 signal input port will switch directly to the input port which is corresponding with the input shortcuts. Moments later, the menu system will show the input channel state, including port name, whether the input signal is effective or not, also will show signal resolution specifications in effective case. About this content, please refer to the "Default state introduction" [🕮13]。

If users need to switch image 2 port, can long press the relevant input shortcut in the default state, if it is not conflict with the image 1 input port, the input port of image 2 will be switch to target port directly; Otherwise, will pop up prompt window, users can cancel operation or forced switching two pictures input port as demands.

## Function shortcut

### PIP function shortcut:

The shortcuts only can be available in "seamless switching" function closed. If in the PIP open state, "seamless switching" function open, then PIP function will be forced to close.

| Icon | Explanation |
|---|---|
| | PIP function closed, image 1 signal display normally. |
| | PIP function open, image 1 is on top, namely image 1 display area covers image 2. |
| | PIP function open, image 2 is on top, namely image 2 display area covers image 1. |

### PART function shortcut:

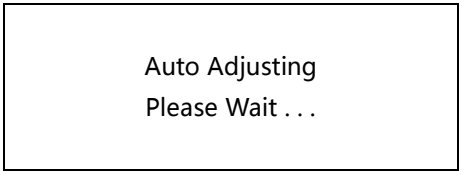
PART function, namely PART or full-screen display image fast switching function.

In the state of LED display normally, PART function should be closed; when in the circumstance of the monitor to setup broadcast, can use PART function open, image full resolution display characteristics, to make the process convenient and fast.

| Icon | Explanation |
|---|---|
| | PART function closed. LED screen display the complete program picture, the program picture is shrinking in the monitor. |
| | PART function open. LED screen display part program picture, the programs' picture is full screen in the monitor. |

### AUTO function shortcut:

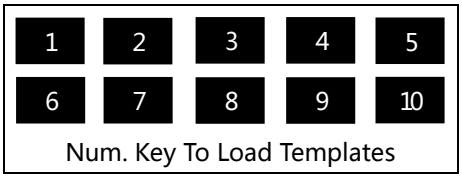
In the "Default State" [🕮13], press "AUTO" key , the menu will be:



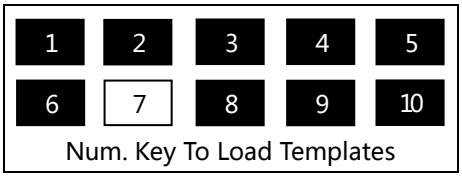

At this moment, system is to adjust the display position of the image automatically, after this process completed, the menu system returns to "Default State" [🕮13].

MODE function shortcut:

In the "Default State" [13], press "MODE" key ,menu enter the template loading shortcut menu state as below:



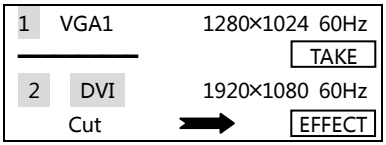

Press a number key, then the corresponding template will be loaded into the system instantly, and the corresponding digital will also be displayed in highlight. For example:




In the multi-machine connection state, any one unit LED-550 can be as the controller of "MODE" function. Ensure all the machines in the "Default State" [13], press the "MODE" key on any machine, all the machines will enter the template loading shortcut menu state, in this shortcut menu state, press any numeric key on any machine, then all the machine will load the corresponding template of their respective system, it is convenient for you to switch the working state in various application occasions rapidly.

TAKE & EFFECT function shortcut:

In the "Default State" [13], press "TAKE" or "EFFECT" , the menu will be fast picture switch interface as belows:




Tips:

1. Before entering the interface, the system will prompt the user to force close all the conflict function (automatic switch), and turn on the picture 2.

2. Short to press "EFFECT" button, switch mode is changed forward direction; long to press "EFFECT" button, switch mode reverse change.
3. When the current switching mode to be "Fade", it will appear a vertical progress bar in the LCD screen, the user can use the knob to control the process of fade artificially.
4. In this interface, the "OK" button and "TAKE" button has the same effect.

### Composite shortcut

In the "Default State" [13], press "↩" and "OK" the two keys at the same time, you can switch the FREEZE state of current output image, see "Freeze" for details [26].

If the front LCD screen shows "❄" icon, the output picture has being static, and the system will ignore the input video signal state. In the field applications, using this function can make video processor keep output a stationary frame, then can pull out, shut down or replace the front video equipment of video processor, and will not affect the output image of the video processor.

If the freeze icon disappears from the front LCD screen, the system is in the normal output state.

Note that, when the freeze function takes effect, the current input source signal state should be ignored, if want to view the input source signal state, please close the freeze function.

# Using Mosaic

## Mosaic summarize

LED-550 single has two send card slots, two cards can convey the same image for the two LED display at the same time, also can use two cards cascading, and increase the load area for conveying HD image to a high resolution LED display.
If the actual pixel of the LED display beyond of the sending cards loading ability, for this kind of circumstance, need to use more than one sending cards and use video processor splicing function to solve. Adopt processor splicing, namely can use multi machine combing to display the complete image, also can display independent image separately.

Video processor LED-550 using "synchronous follow-up" technology, solved the difficult splicing problem: splicing image motion lacerate phenomenon, namely the phenomenon of the moving pictures dislocated in splicing crossing. "Synchronous follow-up" technology lets users easily use the LED video processor to realize the large LED screen splicing. "Synchronous follow-up" function will open in the state of splicing function open, the menu system will give the current video synchronism state tips, about this part of the content, please refer to the "State icons and meanings" [14].

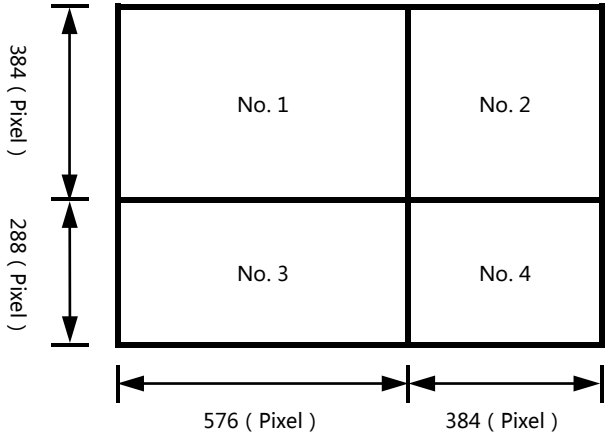
Video processor LED-550 provides "unequal mosaic", just need to confirm the display area and location in the whole LED screen for each unit, then can realize the perfect splicing.

Following is the detailed LED-550 splicing function using introduction and the matters needing attention.

# Unequal Mosaic

Unequal Mosaic is applicable to all need splicing occasions, equal splicing is the special case of the unequal splicing, namely is the special situation of all splicing unit parameters are the same. For all the occasions besides that, all can use unequal joining function.

Following is the example to illustrate how to set the unequal splicing parameters. Splicing form is as below:



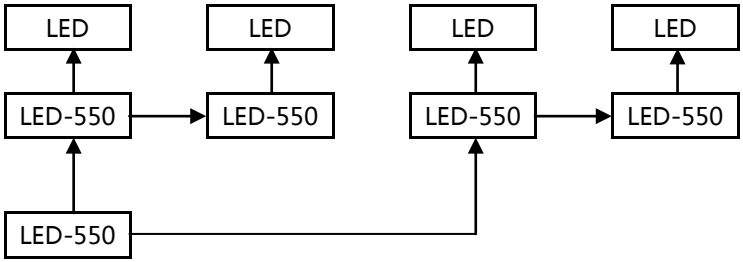

In this case there are four groups LED display screens, each group need a LED-550. The four machines unequal splicing parameters must be set as the following table:

| Processor / Parameter | No. 1 | No. 2 | No. 3 | No. 4 |
|---|---|---|---|---|
| H Total | 960 | 960 | 960 | 960 |
| V Total | 672 | 672 | 672 | 672 |
| H Start | 0 | 576 | 0 | 576 |
| V Start | 0 | 0 | 384 | 384 |
| Width | 576 | 384 | 576 | 384 |
| Height | 384 | 384 | 288 | 288 |

After finished the system constructing, need to test the splicing effect, if

"synchronous follow-up" function cannot be successfully launched (namely synchronous follow-up icon are not displayed for a long time), then need to add a LED-550 to do signal shaping, and the above four sets LED can share the plastic signal by itself DVI loop out port

Following is the system diagram:




The diagram above, No. 1 and No. 4 the four sets of input signal LED-550 completely consistent. LED-550 supports infinite level DVI signal connecting loop out without DVI signal splitter.

Note: The description for the pixel position of LED-550, is starting from 0, namely the top-left corner pixels horizontal and vertical positions are both for 0, increasing from left to right on the horizontal direction, on vertical direction increasing from top to bottom.

How to realize the splicing between different dot pitch? For instance:

<table>
<tr><td>P6<br>100×100</td><td>P6<br>100×100</td><td>P6<br>100×100</td><td>P9<br>100×100</td><td>P9<br>100×100</td></tr>
<tr><td>P6<br>100×100</td><td>P6<br>100×100</td><td>P6<br>100×100</td><td rowspan="2">P9<br>100×100</td><td rowspan="2">P9<br>100×100</td></tr>
<tr><td>P6<br>100×100</td><td>P6<br>100×100</td><td>P6<br>100×100</td></tr>
</table>

Above LED screen, joint by two LED screen with different dot pitch, on the exterior, formed a whole unit; the P6 screen on the left, dot matrix for 300×300; The right P9 screen, dot matrix for 200×200.

Now we use two video processors to realize splicing, supposed the left side using the No. 1 processor, the right to use the No. 2 processor, the splicing parameters should be set as following:

| Processor / Parameter | No. 1 | No. 2 |
|---|---|---|
| H Total | 3600 | 3600 |
| V Total | 1800 | 1800 |
| H Start | 0 | 1800 |
| V Start | 0 | 0 |
| Width | 1800 | 1800 |
| Height | 1800 | 1800 |

Computational formula:

H Total = the sum of each dot pitch of LED in horizontal direction multiply the horizontal pixels of LED screen.

V Total = the sum of each dot pitch of LED in vertical direction multiply the vertical pixels of LED screen.

Width = dot pitch × screen horizontal pixels

Height = dot pitch × screen vertical pixels

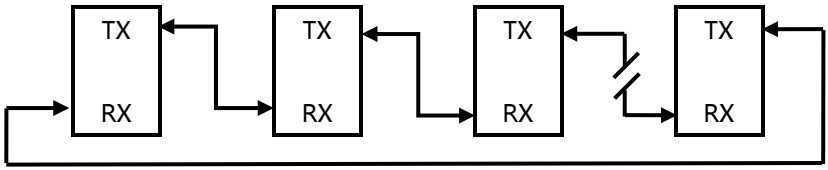
# Multi machine connection

## Summarize

With the large area, HD display time arriving, the LED display area usually will beyond the sending card loaded area more, LED display project also is to realize by the way of using many screens and processors. However, with the increasing of the processors, let field control staff' s work also become complicated. For that, simplified site operation, LED-550 has multi-machine connection function. Multi-machine connection function is as following: all machines recover to a certain work mode quickly, namely "multi-machine loading template".

## Connection type

On the left of the rear panel of LED-550, there are two 3.5 mm headset jacks, one marked as "TX" for the communications signals sent port; another is "RX" as a communication signal receiver port. In order to achieve multi machine connection, we need to connect all the machines according to the following picture.




In the above diagram, the arrows represent 3.5 mm headset plug, and communication signals are always from "TX" port sent to "RX" port. This is a cyclic annular, its advantage is:

A. Any of LED-550 can be a starting point of the communication signal, namely operating terminal can be arbitrary machine of the ring.
B. Easily to add or remove one unit machine from the circular link structure.

# Multi machine load template

When many machine state is established (i.e. connected the machines well according to the above mentioned "Multi machine connection mode" will machine connect), to press "MODE" function shortcuts in any one LED-550 front panel, all the machines will enter the template loading shortcut menu.

Please return "MODE function shortcuts" [📖32] to check details instruction.

# Input signal hot backup

## Summarize

Note that what the input signal hot backup is? What is the use of it?
In simple terms, warm backup is that when the input signal missed, using spare input signal automatically and rapidly to replace the original input signal, maximum ensure output image uninterrupted.
Hot backup is a powerful guarantee to the stability of the system, which makes the impact to be the lowest that made by signal input device failure.

## How to use the hot backup?

Enter the "PIP submenu" and select "automatic switching function", you can set how to use LED-550 hot backup function here. Here are four options, for details please refer to the table below:

| Item | Details |
|---|---|
| Off | Not to use the heat backup function |
| Window 1 | If image 1 signal is valid, then output image 1, otherwise, output image 2. |
| Window 2 | If image 2 signal is valid, then output image 2, otherwise, output image 1. |
| Signal | In the case of two channels signal are invalid, the first valid of the two channels signal, then its image will be output, the behind signal does not affect the output. |

Note that when you use the hot backup function, location and size of image 1 or image 2 output screens should be set in advance according to actual use.

Recommend using "Window 1" option, set the backup sources to the image 2. Hot backup is the operation based on the signal detection, when the signal source is unstable or lost moments, there will be instant black screen, but within the fastest time (around 0.2 seconds), backup channel image will be displayed, let picture interrupt time reduced to a minimum.

# FAQ

LED-550 provides abundant function for the customers, some functions use requires users to have quite a bit of professional knowledge. When you have problems, can try to timing machines, if cannot solve it according the following step, please contact with the local agent, or contact our service department directly. For your safety, do not attempt to repair the product by yourself.

| Phenomenon | Check list | Page |
|---|---|---|
| No output image and no display on LCD in the front panel. | ● Check the power cord<br>● Check the power switch | |
| LCD in the front panel is displaying information, but no output image or the image is not stable | ● Check whether properly connected the input signal and have switched to the corresponding source (if no signal, the front panel LCD screen will display no signal, and the machine will have no image output at the moment)<br>● Check display terminals whether to support the output resolution and refresh rate of LED-550.<br>● Check if the brightness and contrast set too low.<br>● Check whether the user color temperature set too low.<br>● check image 1 and 2 input status, whether the top picture showed a signal<br>● Try to reset the machine to be the factory setting by "factory reset" of the "function Settings" sub menu. | [13]<br>[9]<br>[17]<br>[17]<br>[13]<br>[26] |
| Image display position deviation | ● Enter "output Settings" submenu, adjust the "horizontal position" and "vertical position", till the image display properly | [18] |
| VGA or DVI port images showed abnormal | ● Check whether the input signal resolution is accordance with VESA standard. | [9] |
| VGA Image displayed in un-full screen | ● Press the front panel "AUTO" button until the image display correct (automatic adjustment, please use the full screen and not take black side signal) | [8]<br>[31] |
| PIP display abnormal | ● Check if it is reasonable that the item numerical of "horizontal width" and "vertical height", "horizontal position" and "vertical position" of "PIP" submenu. | [28] |
| Fade function is invalid | ● Check whether automatically switch function is closed<br>● Whether the input signal of image 1 and image 2 is valid. | [21]<br>[13] |

# Model Introduction

LED-550DX

| | |
|---|---|
| S | SDI input/loop out |
| D | Expand external DVI input port |
| V | Expand external VGA input port |

# Warranty

## The whole unit warranty

- One year (from the buying date);
- If the invoice is lost, the 60 days after the production date will be the warranty start date for the product.

## The warranty provisions

- The machine soaking and collisions produced besmirch or surface scratches and other abnormal using causes of malfunction or damage;
- Demolition machine or modification, which is not to be agreed by our company;
- Using in the not specified used working conditions, resulting in fault or damage (such as high temperature, low voltage or unstable etc.);
- Force majeure (such as fire, earthquake, etc.) or natural disasters (like lightning, etc) caused the fault or damage;
- Beyond the product warranty.